RULE 63 (37 C.F.R. 1.63) DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

As a below named inventor, I hereby declare that my residence, post office address and citizenship are as stated below next to my name, and I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

COLLOIDAL PHOTONIC CRYSTALS

			2018/12/11/01/01/10			
	ication of which (check a	pplicable box(s)):				
_	ttached hereto s filed on		as U.S. Application S	Serial No		Atty Dkt. No
☐ was	s filed on	al application No	PCT/GB00/03405	on on	05/09/00	
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and (ii ap	bilicable to 0.3. of FCT a	pplication) was amended of				
amendme 37 C.F.R. below and priority is	ent referred to above. I am 1.56. I hereby claim fore I have also identified belo	eign priority benefits under	close information which is 35 U.S.C. 119/365 of any or patent or inventor's cert	material to the pa foreign applicatio	atentability of th n(s) for patent	is application in accordance wit or inventor's certificate listed e that of the application on whic
Applicati	on Number		Country			Day/Month/Year File
9921048.	6		GB_		<u></u> .	07/09/9
	claim the benefit under 35 on Number	5 U.S.C. §119(e) of any Uni	ted States provisional app Date/Month/Year Filed	lication(s) listed I	below.	
subject m U.S.C. 11	atter of each of the claim 2. I acknowledge the dut	e of this application is not (disclosed in such prior app mation as defined in 37 C.I	olications in the m	nanner provided	bove or below and, insofar as th I by the first paragraph of 35 en the filing date of the prior
Drior II S	S./PCT Application(s):					Status: patente
	APC I Application(s).					pending, abandone
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FOR ADDITIONAL INVENTORS, check box 🗵 and attach sheet with same information and signature and date for each.

Nixon & Vanderhye P.C. (12/95)

RULE 63 (37 C.F.R. 1.63) DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Page 2

3.	Inventor's Signature:		a	f	Date:	26th March 2002
	Inventor:	John (first)	G MI	RARITY (last)		GB (citizenship)
	Residence: (city) Post Office Address: (Zip Code)	QinetiQ Malvern St Andrews Road, Malvern WR14 3PS	n Worcs	(state/country) GB		
4.	Inventor's Signature: Inventor:	15. Hyll		SHEPHERD	Date:	19 Harh 2002
	Residence: (city) Post Office Address:	(first) QinetiQ Malvern St Andrews Road, Malvern	MI Worcs	(last) (state/country) GB		(citizenship)
5.	(Zip Code) Inventor's Signature:	WR14 3PS			Date:	
5 .	Inventor:	Stephen (first)	C MI	KITSON (la <u>st)</u>	. Date.	GB (citizenship)
	Residence: (city) Post Office Address: (Zip Code)	Bristol Hewlett Packard HP Labs BS34 8Q2	, Phitton Road, Sto	(state/country) GB oke Cifford,Bristol		
6.	Inventor's Signature: Inventor:					
	Residence: (city) Post Office Address:	(first)	MI	(last) (state/country)		(citizenship)
7.	(Zip Code) Inventor's Signature: Inventor:				Date:	
	Residence: (city) Post Office Address:	(first)	MI	(la <u>st)</u> (state/country)	e	(citizenship)
	(Zip Code)				Date:	
8.	Inventor's Signature: Inventor: Residence: (city)	(first)	. МІ	(last) (state/country)		(citizenship)
	Post Office Address: (Zip Code)					
9.	Inventor's Signature: Inventor:	(first)	MI	(last)	_ Date:	(citizenship)
	Residence: (city) Post Office Address: (Zip Code)			(state/country)		
10.	Inventor's Signature:				Date:	
	Residence: (city) Post Office Address:	(first)	MI	(last) (state/country)		(citizenship)
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Nixon & Vanderhye P.C. (12/95)

RULE 63 (37 C.F.R. 1.63) DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Page 2

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3.	Inventor's Signature:				Date:	
	Inventor:	John	- G	RARITY		GB
		(first)	MI	(last)		(citizenship)
	Residence: (city)	QinetiQ Malvern		(state/country) GB		(0.11201101111)
	Post Office Address:	St Andrews Road, Malvern	Worcs	(51110110101111),		
	(Zip Code)	WR14 3PS	1 110103			
	(Zip Code)	WK14 3F3	 .			
4.	Inventor's Signature:				Date:	
	Inventor:	Terence	J	SHEPHERD		GB
		(first)	MI	(last)		(citizenship)
	Residence: (city)	QinetiQ Malvern	•	(state/country) GB		(Gluzerianip)
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5.	Inventor's Signature:		<u> </u>		Date:	9/04/07
	Inventor:	Stephen	С	KITSON		ĞB
		(first)	MI	(last)		(citizenship)
	Residence: (city)	Bristol		(state/country) GB		(5.1.2.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.
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	(Zip Code)	BS34 8QZ				
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	Inventor:	(E. 1)				
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10.	Inventor's Signature:	•			Date:	
	Inventor:	-			Dale.	
	HIVEIILUI.	(5:rat)	5.41	# - 45		4
	Davidson (1911)	(first)	MI	(last)		(citizenship)
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RULE 63 (37 C.F.R. 1.63) DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

As a below named inventor, I hereby declare that my residence, post office address and citizenship are as stated below next to my name, and I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

		COLLO	DAL PHOTONIC C	RISTALS		
	fication of which (check	applicable box(s)):				
	attached hereto					A., O
	s filed on		as U.S. Applicat		05/00/00	Atty Dkt. No.
	s filed as PCT Internation		PCT/GB00/034	<u>05</u> on	05/09/00	
and (if ap	plicable to U.S. or PCT a	application) was amended on.	26/11/01			
amendme 37 C.F.R below and priority is	ent referred to above. I a . 1.56. I hereby claim for d have also identified bel	d and understand the contents of acknowledge the duty to disclose eign priority benefits under 35 tow any foreign application for p is claimed, before the filing date	e information whicl J.S.C. 119/365 of a atent or inventor's	n is material to the p any foreign applicati certificate having a	eatentability of this on(s) for patent or	application in accordance with inventor's certificate listed nat of the application on which
	ion Number		Country	•		Day/Month/Year Filed
9921048.	.6		GB			07/09/99
	claim the benefit under 3 ion Number	5 U.S.C. §119(e) of any United C	States provisional Date/Month/Year F	application(s) listed	below.	
subject n U.S.C. 1	natter of each of the clain 12, I acknowledge the du	5 U.S.C. 120/365 of all prior Unns of this application is not disc ty to disclose material informati CT international filing date of th	losed in such prior on as defined in 37	applications in the r	nanner provided b	ve or below and, insofar as the ythe first paragraph of 35 the filing date of the prior
Prior U.S	S./PCT Application(s):					Status: patented
	ion Serial No.	ı	Day/Month/Year F	iled		pending, abandoned
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PCT/GB	00/03405		05/09/00			PENDING
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Our Ref.: 124-929

RECORDATION FORM COVER SHEET

PATENTS ONLY

Commissioner of Patents and Trademarks Box Assignment, Washington, D.C. 20231

To the Honorable Commissioner of Patents and Trademarks: Plea	se record the attached original documents or conv thereof
1. Name of conveying party(ies):	2. Name and address of receiving party(ies):
Richard Michael Amos Stephen Christopher Kitson	2. Ivalide and address of receiving party(les).
John Gilroy Rarity	Name: QINETIQ LIMITED
1	Internal Address:
Paul Richard Tapster	Street Address: Cody Technology Park
Terence John Shepherd	Ively Road
•	Ivery Road
Additional name/s of conveying party/ies attached?	
3. Nature of conveyance:	City: Farnborough, Hants
	State/Country: United Kingdom
Security Assignment Change of Name	Zip: GU14 0LX
Other	
Execution Date: April 17, 16, 18, 16 and 9, 2002	Additional name/s & address/es attached? Yes No
4. Application number(s) or patent number(s):	
If this document is being filed together with a new application, the execution	n date of the application is:
A. Patent Application No(s).	B. Patent No(s).
(1) 10/070,382	(1)
(2)	(2)
(3)	(3)
Additional numbers att	
5. Name and address of party to whom correspondence	6. Total number of applications & patents involved: 1
concerning document should be mailed:	
	7. Total fee (37 CFR 3.41) \$ 40.00
Name: Arthur R. Crawford	
	Authorized to be charged to deposit account #14-1140
Internal Address:	
	8. The Commissioner is hereby authorized to charge any
Street Address: Nixon & Vanderhye P.C.	<u>deficiency</u> , or credit any overpayment, in the fee(s) filed, or
1100 North Glebe Road	asserted to be filed, or which should have been filed herewith
8 th Floor	(or with any paper thereafter filed in this application by this
City: Arlington State: VA Zip: 22201	firm) to our Account No. 14-1140.
DO NOT USE	THIS SPACE
9. Statements and signature.	
To the best of my knowledge and belief, the foregoing information	tion is true and correct and any attached copy is a true copy
of the original document.	
Arthur R. Crawford	May 7, 2002
1	nature Date
· Reg. No. 25,327	I
	nal cover sheet, attachments, and document: [5]
ARC:pfc	

05/10/2002 MALI11 00000070 10070382

01 FC:581

40.00 OP

ASSIGNMENT OF PATENT APPLICATION

	(Richard Michael AMOS
	(John Gilroy RARITY
	(Paul Richard TAPSTER
(inventors)	(Terence John SHEPHERD
	(Stephen Christopher KITSON
	In consideration of past and future employment, and my (our) obligation to assign
	intellectual property generated as result of my (our) employment, the receipt and
	sufficiency of which consideration is hereby acknowledged, the undersigned agree(s)
•	to assign, and hereby does assign, transfer and set over to
(Assignee)	(QINETIQ LIMITED
(Address)	(of Cody Technology Park Ively Road, Farnborough, Hants GU14 0LX
	(hereinafter designated as the Assignee) the undersigned's entire right, title and
	interest for the United States, its territories, dependencies and possessions, and for
	the country of
(Other	(in the invention, and all application for patent and any Letters
Countries)	Patent which may be granted therefore, known as
(Title)	COLLOIDAL PHOTONIC CRYSTALS (Case No. P2856/USW)
•	for which the undersigned has (have) executed on even date herewith an application
	for patent in the United States of America or, if not on even date, then has executed
	(on or has already filed in
	(U.S. appln. Serial No.10/070, 382 , filed on
•	(The undersigned acknowledges an obligation of assignment of this invention to said
	assignee at the time the invention was made.

The undersigned agree(s) to execute all papers and documents necessary in connection with the application or any interference which may be declared and any continuing or divisional applications thereof and also to execute separate assignments in connection with such applications as the Assignee may deem necessary or expedient and further to perform any act which may be necessary in connection with claims or provisions of the International Convention for Protection of Industrial Property or similar agreements.

The undersigned agree(s) to perform all affirmative acts which may be necessary to obtain a grant of a valid United States patent to the Assignee.

The undersigned hereby authorize(s) and request(s) the Commissioner of Patents to issue any and all Letters Patent of the United States resulting from said application or any division or divisions or continuing applications thereof to the said Assignee, as Assignee of the entire interest, and hereby covenants that he has (they have) full right to convey the entire interest herein assigned, and that he has (they have) not executed and will not execute, any agreement in conflict herewith.

The undersigned hereby grant(s) the firm of NIXON & VANDERHYE P.C. the power to insert on this assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent Office for recordation of this document.

. In witness whereof, executed by the undersigned on the date(s) opposite the undersigned signature(s).

Signature of Inventor	R M AMOS/	Date	17th April 2002
Witnessed by	N.N. Handley	Date	17 April 2002
Signature of Inventor	P. Turkler PR TAPSTER	Date	16 th April 2002
Witnessed by	Lie Handley	Date	16" April 2002
Signature of Inventor	T J SHEPHERD	Date	18th April 2002.
Witnessed by	Glambat	Date	18 th April 2002
Signature of Inventor	J G RARITY	Date	16h April -2002
Witnessed by	L. M. Handley	Date	162 April 2002
Signature of Inventor	S C KITSON	Date	<u>.</u>
Witnessed by		Date	
Signature of Inventor		Date	
Witnessed by		Date	



IPD/P2856/USW

ASSIGNMENT OF PATENT APPLICATION

	(Richard Michael AMOS (John Gilroy RARITY		
	(Paul Richard TAPSTER		
(Inventors)	(Terence John SHEPHERD		
(mventors)	(Stephen Christopher KITSON		
	In consideration of past and future employmen intellectual property generated as result of my sufficiency of which consideration is hereby act to assign, and hereby does assign, transfer and	(our) employment, the receipt and knowledged, the undersigned agree(s)	
(Assignee)	(QINETIQ LIMITED	L. Harris OHAAOLV	
(Address)	(of Cody Technology Park Ively Road, Farnbo (hereinafter designated as the Assignee) the u interest for the United States, its territories, dep the country of	ndersigned's entire right, title and pendencies and possessions, and for	
(Other	(in the invention, and all ap	pplication for patent and any Letters	
Countries)	Patent which may be granted therefore, known	as a contract to the second	,
(Title)	COLLOIDAL PHOTONIC C	RYSTALS (Case No. P2856/USW)
•	for which the undersigned has (have) executed	on even date herewith an application	
	for patent in the United States of America or, if	not on even date, then has executed	
	(on or has already filed in		
	(U.S. appln. Serial No. 10/070,382 , , f	iled on	
	(The undersigned acknowledges an obligation	of assignment of this invention to said	
	assignee at the time the invention was made.		

The undersigned agree(s) to execute all papers and documents necessary in connection with the application or any interference which may be declared and any continuing or divisional applications thereof and also to execute separate assignments in connection with such applications as the Assignee may deem necessary or expedient and further to perform any act which may be necessary in connection with claims or provisions of the International Convention for Protection of Industrial Property or similar agreements.

The undersigned agree(s) to perform all affirmative acts which may be necessary to obtain a grant of a valid United States patent to the Assignee.

The undersigned hereby authorize(s) and request(s) the Commissioner of Patents to issue any and all Letters Patent of the United States resulting from said application or any division or divisions or continuing applications thereof to the said Assignee, as Assignee of the entire interest, and hereby covenants that he has (they have) full right to convey the entire interest herein assigned, and that he has (they have) not executed and will not execute, any agreement in conflict herewith.

The undersigned hereby grant(s) the firm of NIXON & VANDERHYE P.C. the power to insert on this assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent Office for recordation of this document.

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In witness whereof, executed by the undersigned on the date(s) opposite the undersigned signature(s).

Signature of Inventor	D.M.AMOC	Date	
Witnessed by	R M AMOS	Date	: 1
Signature of Inventor	P R TAPSTER	Date	
Witnessed by	•	Date .	
Signature of Inventor	T J SHEPHERD	Date -	
Witnessed by		Date -	
Signature of Inventor	J G RARITY	Date -	
Witnessed by		Date -	
Signature of Inventor	5. hitson	Date -	9/04/07
Vitnessed by	Muchyli	Date _	9/04/02
Signature of Inventor		Date _	
Vitnessed by		Date _	